

In the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A thin film magnetic head comprising a slider, at least one inductive type electromagnetic conversion element and a thermal diffusion film,

the inductive type electromagnetic conversion element including a first magnetic film, a second magnetic film, a gap film, a coil film and an insulating film which are supported by the slider,

the forefronts of the first and the second magnetic films being opposed via the gap film in the air bearing surface side of the slider, and thereby, constituting a pole portion

the first magnetic film being extended backward from the pole portion on the basis of the air bearing surface,

the second magnetic film being extended backward from the pole portion with keeping a given space for the first magnetic film, and being joined with the first magnetic film at a backward joining portion,

the coil film being embedded in the insulating film, and being wound spirally around the backward joined portion,

the thermal diffusion film being made of a metallic film, and disposed in the heat transmission path from the coil film toward the slider so as to radiate Joule heat created in the coil film via the slider.

2. (Original) A thin film magnetic head as defined in claim 1, wherein the thermal diffusion film is continued from the coil film, and expanded outside from the coil film.

3. (Original) A thin film magnetic head as defined in claim 2, wherein the thermal diffusion film is so formed as to be integrated with the coil film.

4. (Original) A thin film magnetic head as defined in claim 1, wherein the first magnetic film is provided nearer the slider than the second magnetic film, and the thermal diffusion film is disposed in between the first magnetic film and the slider.

5. (Original) A thin film magnetic head as defined in claim 4, wherein a surface of the thermal diffusion film is contacted with the surface opposing to the slider of the first magnetic film.

6. (Original) A thin film magnetic head as defined in claim 1, wherein the thermal diffusion film includes a first thermal diffusion film and a second thermal diffusion film,

the first thermal diffusion film being continued from the coil film, and expanded outside from the coil film,

the second thermal diffusion film being disposed in between the first magnetic film and the slider.

7. (Original) A thin film magnetic head as defined in claim 6, wherein the first thermal diffusion film is so formed as to be integrated with the coil film.

8. (Original) A thin film magnetic head as defined in claim 6, wherein the first magnetic film is provided nearer the slider than the second magnetic film, and the second thermal diffusion film is disposed in between the first magnetic film and the slider.

9. (Original) A thin film magnetic head as defined in claim 8, wherein a surface of the second thermal diffusion film is contacted with the surface opposing to the slider of the first magnetic film.

10. (Original) A thin film magnetic head as defined in claim 1, further comprising at least one magneto resistive effective element for reading.

11. (Original) A thin film magnetic head as defined in claim 10, wherein the magnetoresistive effective element includes a spin valve film structure.

12. (Original) A thin film magnetic head as defined in claim 10, wherein the magnetoresistive effective element is constructed of a ferromagnetic tunnel junction effective element.

13. (Original) A thin film magnetic head as defined in claim 10, wherein the magnetoresistive effective element is constructed of a giant magnetoresistive effective element with a perovskite type magnetic substance.

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14. (Original) A thin film magnetic head as defined in claim 10, further comprising a first shielding film and a second shielding film, wherein the magnetoresistive effective element is disposed in between the first shielding film and the second shielding film, and the first shielding film is provided nearer the slider than the second shielding film, and the second shielding film is provided nearer the slider than the first magnetic film.

15. (Previously Amended) A magnetic head device comprising a thin film magnetic head as defined in claim 1 and a head supporting apparatus to support the thin film magnetic head.

16. (Original) A magnetic disk driving device comprising a magnetic head device as defined in claim 15 and a magnetic disk which is magnetically recorded and reproduced by the magnetic head device.

17. (New) A thin film magnetic head as defined in claim 3, wherein said coil film is formed in a double layer, and said thermal diffusion film is so formed as to be integrated with each layer of said coil film.